

1/2 021
UNCLASSIFIED
PROCESSING DATE--02OCT70
TITLE--FUNCTIONAL MOBILITY OF GUSTATORY RECEPTORS OF THE TONGUE IN PEPTIC
ULCER -U-
AUTHOR--(03)-BUDYLINA, S.M., ARTEMYEV, YE.N., RUSAKOVA, L.N. *R*
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 43-45
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GASTROINTESTINAL SYSTEM, DIGESTIVE DISEASE, LESION, GUSTATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/0809 STEP NO--UR/0504/76/042/003/0043/0045
CIRC ACCESSION NO--AP0102771
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

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CIRC ACCESSION NO--AP0102771
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN PATIENTS WITH GASTRIC AND
DUODENAL PEPTIC ULCER GUSTATORY SENSITIVITY WAS INVESTIGATED BY THE
METHOD OF FUNCTIONAL MOBILITY. IT WAS REVEALED THAT THE LEVEL OF THE
FUNCTIONAL MOBILITY OF THE GUSTATORY RECEPTORS OF THE TONGUE IN PEPTIC
ULCER IS LOWER THAN THAT IN HEALTHY INDIVIDUALS. ALL THE PATIENTS
EXHIBITED A DISORDER OF THE GASTRO LINGUAL REFLEX. IN PEPTIC DUODENAL
ULCER THERE ARE THREE TYPES OF REACTIONS TO FOOD. THE TREATMENT
CONDUCTED, AS A RULE, RAISES THE ACTIVITY OF THE GUSTATORY RECEPTORS. A
REACTION TO FOOD IS RESTORED NOT IN ALL THE PATIENTS. INVESTIGATION OF
THE GUSTATORY RECEPTION BY THE METHOD OF FUNCTIONAL LABILITY MAY SERVE
AS AN ADDITIONAL TEST FOR CHARACTERIZATION OF THE CLINICAL PICTURE AND
THE COURSE OF PEPTIC ULCER.

UNCLASSIFIED

1/2 008 UNCLASSIFIED
TITLE--SYNTHESIS OF SOME DIARYL KETONES -U-
AUTHOR--(05)--MIRGNOV, G.S., CHERNYAKOVSKAYA, K.A., FARBEROV, M.I.,
TYULENEVA, I.M., RUSAKOVA, M.S.
COUNTRY OF INFO--USSR
SOURCE--Zh. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 620-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, AROMATIC KETONE, AROMATIC HYDROCARBON,
PHOSGENE, ALUMINUM CHLORIDE, CHLOROMETHANE
CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1944
STEP NO--UR/0080/70/043/003/0620/0627
ACCESSION NO--AP0132205
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132205

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIARYL KETONES WERE PREPD. EITHER BY THE DIRECT REACTION OF AROMATIC HYDROCARBONS WITH PHOSGENE AND ALCL SUB3, OR BY THE REACTION OF AROMATIC HYDROCARBONS WITH CCL SUB4 FOLLOWED BY HYDROLYSIS OF THE INTERMEDIATE DIARYLDICHLOROMETHANE.
FACILITY: VAROSLAV. TEKHNOL. INST., YAROSLAVL, USSR.

UNCLASSIFIED

-USSR

UDC 581.19:632.952

TIKHONOVA, N. A., POZNANSKAYA, N. L. RUSAKOVA, V. A., IVANOVA, S. N.,
FADEYEV, Yu. N., IVANCHENKO, Yu. N., SHVETSOV-SHILOVSKIY, N. I., MEL'NIKOV, N. N.
and ZHIL'TSOVA, G. I., All Union Scientific Research Institute of Chemical
Plant Protection, Moscow, and the All-Union Scientific Research Institute of
Phytopathology, Moscow

"Studies of the Fungicidal Activities of Certain Benzoxazoline Derivatives"

Leningrad, Makologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 450-451

Abstract: Evaluations were made of the fungicidal effects of N-carbalkoxy-,
N-carbalkenyloxy-, N-carbaryloxy-, N-carbamoyl-, and N-aminomethyl-
derivatives of benzoxazoline-2 and its substituted compounds on the agents
of wheat rust *Puccinia triticina* and *P. graminis* f. *tritici*, potato blight
agent *Phytophthora infestans*, and the conidia of *Alternaria solani* and
Botrytis cinerea. These compounds showed the most pronounced fungicidal
effects at a concentration of 0.1% against the wheat rust agents, and somewhat
less effect against potato blight. They are practically inactive at a con-
centration of 0.005% in vitro. As a rule, introduction of halogens into the

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TIKHONOVA, N. A., et al., Mikologiya i Fitopatologiya, Vol 7, No 5, 1973,
pp 450-451

benzene ring reduced fungicidal activity. The results showed that derivatives
of benzoxazoline may be effective fungicidal agents.

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USSR

UDC 616.155.18-02:576.351.252.097.29/-092.4

RUSAKOVA, V. Ye., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Changes in the Hemolytic Activity of Staphylococcus delta- and alpha-Toxins Upon Interaction in Vitro with Tissues of Organs of Experimental Animals"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 6, Aug 73, pp 81-85

Abstract: The effects on the hemolytic activity of staphylococcus alpha- and delta-toxin of contact in vitro with the tissues of various organs of rabbits, mice, and guinea pigs were studied. The activity of the alpha-toxin was not altered on contact with tissues of animal organs, but that of the delta-toxin was considerably reduced or disappeared entirely. The strongest effects in binding the delta-toxin were exerted by the tissues of the lungs, brain, and liver of rabbits and of the spleen, lungs, and brain of mice. The interaction of the tissues with the toxins did not depend on whether the animals had or had not been immunized with alpha- and delta-toxoids.

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Microbiology

USSR

UDC 576.851.252.097.29

R
RUSAKOVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya,
Academy of Medical Sciences USSR

"Sensitizing Properties of Staphylococcus Delta-Toxin"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp
77-81

Abstract: Active sensitization of guinea pigs with Staphylococcus delta-toxin and crude Staphylococcus toxoid produced the characteristic anaphylactic shock, and subsequent intravenous injection of a challenge dose of the homologous preparation killed the animals. The specificity of the reaction was demonstrated by the fact that injection of a challenge dose of Staphylococcus alpha-toxin produced only transient symptoms of anaphylactic shock. In a series of experiments with passive anaphylaxis, intraperitoneal injection of guinea pigs with immune rabbit serum followed by intravenous injection of a challenge dose of Staphylococcus delta-toxin killed all the animals. The specificity of the reaction was demonstrated by the fact that other antigens - alpha-toxin, filtrate of a Staphylococcus culture, toxoid - did not elicit the symptoms of anaphylactic shock or kill the animals. Guinea pigs injected intraperitoneally
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RUSAKOVA, Ye. V., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 77-81

with normal serum from nonimmunized rabbits did not develop any pathological phenomena following intravenous injection of any of the three antigens.

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USSR

UDC 615.372:576.851.252].012.6

RUSAKOVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya,
Academy of Medical Sciences USSR

"Method of Obtaining and the Properties of Staphylococcus Delta Toxoid"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971,
pp 96-101

Abstract: Pathogenic staphylococcus strain No 107, which produces delta toxoid but no alpha or beta toxoids, was used to develop nontoxic immunogenic derivatives. An effective method of rendering delta toxoid harmless without destroying its immunogenic properties is to treat it with 40% formaldehyde in a concentration of 0.2 to 1% at 35°C, which abolishes its hemolytic activity in 1-5 days. Rabbits vaccinated with the attenuated delta toxoid survive intravenous injections of lethal doses of delta and alpha toxoids and become much more resistant to intravenous administration of the live Staphylococcus, while vaccination with sorbed alpha toxoid does not protect the animals from the lethal effects of delta toxoid. Further investigations will be performed before the preparation is approved as a safe vaccine for man and animals.

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UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--POLAROGRAPHIC AND POTENTIOMETRIC DETERMINATION OF
BENZENEPOLYCARBOXYLIC ACIDS -U-

AUTHOR--(04)-KRYUKOVA, G.G., RUSAKOVA, M.S., PAVELKO, N.V., TURKYAN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 15(2), 369-73

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC CARBOXYLIC ACID, POLAROGRAPHIC ANALYSIS,
POTENTIOMETRIC TITRATION, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0694

STEP NO--UR/0075/70/025/002/0369/0373

CIRC ACCESSION NO--AP0113562

UNCLASSIFIED

2/3 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113562

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLAROGRAPHIC CHARACTERISTICS OF 3,3 PRIME,4,4 PRIME BENZOPHENONETETRACARBOXYLIC ACID (I), 3,3 PRIME,BENZOPHENONEDICARBOXYLIC ACID (II) AND 4,4 PRIME, OXYDIPHTHALIC ACIDS (III) WERE OBTAINED. THE 1ST POLAROGRAPHIC WAVE OF I WAS STUDIED MICROCOULOMETRICALLY. THIS WAVE IN BOTH ACID AND ALK. BUFFERS AND THE WAVE OF II IN ALK. BUFFER ARE OF THE 2 ELECTRON TYPE (REDN. OF THE ACARBONYL GROUP). THE 2ND WAVE OF I AND THE WAVE OF III IN AN ACID SOLN. IS OF THE 4 ELECTRON TYPE. IN AN ALK. SOLN. THIS WAVE SHIFTS TO THE AREA OF THE SUPPORTING ELECTROLYTE DISCHARGE POTENTIAL. POLAROGRAPHIC AND POTENTIOMETRIC METHODS WERE DEVELOPED FOR THE DETN. OF I IN THE PRESENCE OF HNO SUB3, OF I IN THE PRESENCE OF II AND ACOH AND OF III IN THE PRESENCE OF ACOH. TO ANALYZE A 1:5 MIXT. OF I-HNO SUB3 POLAROGRAPHICALLY, NEUTRALIZE A 0.1-G SAMPLE BY USING PHENOLPHTHALEIN AS INDICATOR, ADD 2.5 ML PH 2.0 BUFFER AND 10 ML 2.5M KCL, AND DIL. TO 25 ML WITH H SUB2 O. RECORD THE POLAROGRAM IN THE RANGE MINSU 0.55 TO MINUS 0.75 V. DET. I CONCN. BY THE 1ST WAVE AND THE METHOD OF STD. ADDNS. IN THE POTENTIOMETRIC METHOD DISSOLVE 0.05-0.20 G IN 25 ML MEOH (CONTG. 4PERCENT H SUB2 O), AND TITRATE WITH 0.1M KOMe. THE 1ST JUMP REPRESENTS THE NEUTRALIZATION OF HNO SUB3, THE 2ND NEUTRALIZATION OF 2 CO SUB2 H GROUPS OF I. THE ERROR IS PLUS OR MINUS 4.0PERCENT. WHEN DETG. I AND II IN THE PRESENCE OF ACOH BY THE POLAROGRAPHIC METHOD, DISSOLVE 1.0-1.5 G IN 25 ML 0.1M (SOLN. A), NEUTRALIZE 2.0 ML OF SOLN. A TO PHENOLPHTHALEIN, ADD 2.5 ML PH 9.0 BUFFER AND 10 ML 2.5M KCL, AND DIL. TO 25 ML WITH H SUB2 O. RECORD THE POLAROGRAM IN THE MINUS 1.15 TO MINUS 1.40 V RANGE.

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113562

ABSTRACT/EXTRACT--DET. THE SUM OF I AND II CONCNS. BY THE METHOD OF ADDNS. TO DET. I ALONE, NEUTRALIZE 2.0 ML OF SOLN. A, ADD 2.5 ML UNIVERSAL BUFFER (PH 2.0) AND 10 ML 2.5M KCL, AND DIL. TO 25 ML WITH H SUB2 O. FILTER AND RECORD THE POLAROGRAM IN THE MINUS 0.55 TO MINUS 0.75 V RANGE. IN THE POTENTIOMETRIC METHOD DISSOLVE 0.05-0.10 G IN 25 ML MECOET CONTG. 4PERCENT H SUB2 O AND TITRATE POTENTIOMETRICALLY WITH A 0.2M KOME. THE 1ST JUMP REPRESENTS THE NEUTRALIZATION OF 2 CO SUB2 H GROUPS OF I. TO DET. III IN THE PRESENCE OF ACOH BY POLAROGRAPHY NEUTRALIZE 0.1-0.2 G OF SAMPLE WITH 0.1M NAOH BY USING PHENOLPHTHALEIN AS INDICATOR, ADD 2.5 ML PH 2.0 BUFFER AND 10 ML 2.5M KCL, DIL. TO VOL. WITH H SUB2 O, RECORD THE POLAROGRAM IN THE RANGE MINUS 1.15 TO MINUS 1.30 V, AND DET. III CONC. BY THE METHOD OF ADDNS. IN THE POTENTIOMETRIC METHOD DISSOLVE 0.05-0.10 G IN 25 ML MECOET CONTG. 4PERCENT H SUB2 O AND TITRATE WITH 0.1M KOME. THE 1ST JUMP REPRESENTS III CONC. THE ERROR IN THE DETN IS PLUS OR MINUS 2.5PERCENT. FACILITY: YAROSLAV. TECHNOL. INST. SCI. RES. INST. MONOMERS SYN. RUBBER, YAROSLAVL, USSR.

UNCLASSIFIED

USSR

UDC 547.26'118 + 547.222

GAZIVOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTAPENKO, L. P., and
RUSALKINA, A. M., Kazan' Chemico-Technological Institute imeni S. M. Kirov

"Reaction of Monochlorophosphites with α -Haloethers"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,575-2,576

Abstract: Dialkylchlorophosphines react with α -haloethers in a manner analogous to the first stage of the Arbuzov reaction. In this study the authors reacted such halides with equimolar amounts of dialkyl chlorophosphites, obtaining the corresponding α -alkoxyethylphosphonate ester chlorides. The reaction was analogous to the Arbuzov reaction. The structure of these products was verified from derivative neutral esters, infrared and paramagnetic resonance data, and elemental analysis for phosphorus and chlorine. Physical constants and structural formulas are given.

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USSR

RUSALOV, V. M., Institute of Psychology of the Soviet Academy of Sciences,
MECACCI, L., Institute of Psychology, Italy

"How Concentration of Attention in Work With a Proofreading Table is Related
to the Alpha Rhythm in a Background EEG"

Moscow, Voprosy Psikhologii, No 3, May/Jun 73, pp 32-44

Abstract: The paper represents a first attempt at experimental association of indices of attention concentration with the energy-frequency characteristics of background bioelectric activity of the human brain. A modified Bourdon's cancellation test was given to 36 subjects to determine concentration of attention while simultaneously recording EEG's in the frontal and occipital regions of the right and left cerebral hemispheres. It was found that the most characteristic index of attention in recognizing the positive and negative key letters in the Bourdon's table is the integral index of productivity of attention determined by a modified Baskakova formula. Concentration of attention in recognition of negative stimuli in the table is appreciably lower than when positive stimuli are to be recognized. The individual differences between test subjects with respect to

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RUSALOV, V. M., MECACCI, L., Voprosy Psikhologii, No 3, May/Jun 73, pp 32-44

concentration of attention show up most markedly in the recognition of negative stimuli. Concentration of attention correlates positively with the alpha rhythm frequency in all four leads, and shows no correlation at all with any of the energy indices of the background EEG.

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USSR

UDC 666.192

RUSAN, V. G., ORESCHENKO, L. P., STEPANCHUKM, V. N.,

"Development of a New Brand of Optical Quartz Glass"

Leningrad, Optiko-Mekhanicheskaya Proymshlennost', No 12, December 1971,
pp 42-45

Abstract: To satisfy a recently arisen requirement for quartz glass having high transparency, it became necessary to produce an especially pure synthetic raw material, with a total admixture content not exceeding 1×10^{-5} to $1 \times 10^{-6}\%$. At an unnamed plant there was tested a number of lots of silicon dioxide, obtained by hydrolysis of the ethyl ester of orthosillicic acid. On the basis of an investigation of the optical properties of the obtained samples of glass, it was shown that the best raw material is the "Irea" band of silicon dioxide. The melting of quartz glass directly from a "cake" of crystalline silicon dioxide improves the production process, and shortens the technological cycle of the creation of the intermediate products, without decreasing their quality. 1 figure. 4 tables. 3 references.

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Acc. Nr: **AP0047341**

Ref. Code: **UR0589**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 29-35
RADIOISOTOPE INVESTIGATION OF THE ESOPHAGUS IN SURGICAL CLINIC

By A. A. Rusanov and T. A. Osipkova

Radioisotope investigation of the esophagus was performed in 78 patients, 31 of them having cancer of the esophagus, 16—cardioesophageal cancer, 6—gastric cancer, 18—non-cancerous lesions of the esophagus and 7—normal esophagus. As a tracer phosphorus—32 was used intravenously. The number of impulses recorded over the intact esophageal portion was taken as 100 per cent. In cancer of the esophagus and cardioesophageal region at the level of tumor the isotope accumulation reached 160—600%. In esophagitis and diverticula with diverticulitis phenomena it amounted to 135 per cent 1—3 hours following the investigation and became normal after 48 hours. In leiomyoma, periesophagitis, esophageal dystonia a significant isotope accumulation was noted. The data obtained were used for establishing a differential diagnosis between cancer and non—cancerous affection of the esophagus, and also in suspicion to tumor recurrence in intrathoracic enterogastric anastomoses and enteroesophageal anastomoses, and if there is a necessity to determine precisely the tumor spread. Thirty seven patients were operated upon and the data of radioisotope investigation were supported by surgical findings. This method is positively evaluated and it should be recommended for practical use in surgical departments.

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UDC 615.849.1.015.25

ALEKSEYEVA, G. N., YEL'TSOV, A. V., KOLESOVA, M. B., MAKSIMOVA, L. I.,
RUSANOV, A. M., Leningrad Chemical-Pharmaceutical Institute

"Radioprotective Properties of 1,2-Dithiolium Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 7, 1972, pp 23-27

Abstract: Study of 6 1,2-dithiolium salts and products of their reduction with dithiomalonylamides, which release sulfur on hydrolysis, showed that only those containing amino groups in positions 3 and 5 have significant radioprotective action in mice irradiated with 700 r. Methylation of the amino group decreased toxicity while slightly intensifying the protective effect. However, the compounds were all less efficacious than aminethylthiuronium (AET) which served as the control. The minimum effective dose was 300 mg/kg. Boosting the dose enhanced the radioprotective effect but increased the toxicity at the same time, causing convulsions and some deaths.

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USSR

UDC 532

PSHENITSYN, V. I., RUSANOV, A. I.

"Optical Methods of Studying Surface Layers of Liquid Solutions"

V sb. Vopr. termodinamiki geterogen. sistem i teorii poverkhnostn. yavleniy (Problems of the Thermodynamics of Heterogeneous Systems and the Theory of Surface Phenomena -- Collection of Works), No. 1, Leningrad, Leningrad University, 1971, pp 198-230 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye117)

Translation: Theoretical and experimental studies devoted to measurements of thickness and to the study of the composition of the surface layer of liquid binary systems of organic substances by ellipsometry methods and on the basis of reflection of light from the boundaries of the two phases are surveyed and analyzed. The authors discuss the following questions on the basis of extensive published data and on the results of their own work: (1) the theoretical foundation of the given methods and their experimental achievement; (2) a comparison of ellipsometric and thermodynamic methods of studying the thickness of surface layers; (3) characteristics of the change in the coefficient of ellipticity and the thickness of the surface layers in the neighborhood of the critical point; (4) the factors effecting the reflecting power of the inter-phase surface; (5) the interrelationship between the reflection coefficient

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PSHENITSYN, V. I., RUSANOV, A. I., Vopr. termodinamiki geterozen. sistem i teorii poverkhnostn. yavleniy, No. 1, Leningrad, Leningrad University, 1971, pp 198-230

and the composition of the surface layer; (6) the relationship between the thickness of the surface layer and its reflecting power. N. I. Pokrovskiy.

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USSR

UDC 541.13:541.183

RUSANOV, A. I., Leningrad State University imeni A. A. Zhdanov

"Thermodynamics of Thin Films and Electrocapillary Phenomena"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 2, 1972, pp 387-390

Abstract: The basic principles of the thermodynamics of thin films and the thermodynamics of electrocapillary phenomena were formulated previously [A. I. Rusanov, Fazovyie ravnovesiya i poverkhnostnyye yavleniya, Leningrad, 1967]. Here, a study has been made of the problems relating these two fields of thermodynamics -- how the basic equations of thermodynamics of electrocapillary phenomena in the presence of thin films are formulated and what effect the external electric potential has on the specific properties of thin films. Two cases of the formation of thin films are considered: 1) the phases α and β contain electrolytes among the other components, and the film is impenetrable for all components of both phases where the set of phases α and β become analogous to an ideally polarizable electrode for the description of which it is necessary to consider the presence of the thin film and the gamma phase; 2) the case where each of the phases α and β forms an ideally polarizable electrode with the phase, and the thin film is formed when the two ideally polarizable electrodes approach to the distance τ . The derived equations are written in terms of the Gibbs method. The analysis is restricted to ideally polarizable systems.

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1/2 017
UNCLASSIFIED
TITLE--PARTITION FUNCTIONS IN SURFACE LAYERS. X. PRESSURE TENSOR IN A
MULTICOMPONENT LIQUID MIXTURES -U-
AUTHOR--(03)-RUSANOV, A.I., KUNI, F.M., BRODSKAYA, YE.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 766-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--FLUID SURFACE, TENSOR, PRESSURE, VAN DER WAALS FORCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1231
CIRC ACCESSION NO--AP0128647
STEP NO--UR/0076/70/044/003/0766/0772
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128647

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ASYMPTOTIC FORMULAS FOR THE NORMAL AND TANGENTIAL COMPONENTS OF THE PRESSURE TENSOR IN MULTICOMPONENT LIQ. SURFACE LAYER AT LARGE DISTANCES FROM THE BOUNDARY SURFACE ARE DERIVED IN THE NEXT PART OF THE STUDY ON THE PRESSURE TENSOR IN LIQ. SURFACE LAYERS. THE DERIVATION IS BASED ON THE ASYMPTOTIC EQUATIONS FOR 1, AND 2, PARTIAL DISTRIBUTION FUNCTIONS OF MULTICOMPONENT MIXTS. THE PARTICULAR CASE WAS CONSIDERED OF VAN DER WAALS FORCES AND RETARDATION EFFECTS OF ELECTROMAGNETIC INTERACTIONS OF MOLS. ACTING BETWEEN THE MOLS. OF THE SYSTEM. THE DERIVED ASYMPTOTIC FORMULAS ENABLE THE DETN. OF THE ASYMPTOTIC FUNCTION OF LOCAL TENSION IN THE MULTICOMPONENT SURFACE LAYER AS A CHARACTERISTIC OF ELEMENTARY LAYER TENSION WITH UNIT THICKNESS INSIDE THE SURFACE LAYER. FACILITY: Leningrad. Gos. Univ. Im. Zhdanova, Leningrad, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PARTITION FUNCTIONS IN SURFACE LAYERS. XI. ASYMPTOTICS OF SINGLE
PARTICLE PARTITION FUNCTIONS IN THE SURFACE LAYER OF A LIQUID MIXTURE
AUTHOR--(03)--KUNI, F.M., RUSANOV, A.I., BRODSKAYA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 553-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARTITION COEFFICIENT, FLUID STATE, FLUID SURFACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3002/1379

STEP NO--UR/C076/70/044/003/0553/0559

CIRC ACCESSION NO--AP0128779

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128779

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THEORETICAL
CONSIDERATIONS, THE ASYMPTOTICS OF SINGLE PARTICLE PARTITION FUNCTIONS
AT A LARGE DISTANCE FROM PHASE BOUNDARY IS FOUND. FACILITY:
LENINGRAD. GCS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 013
UNCLASSIFIED
TITLE--DISTRIBUTION FUNCTIONS IN SURFACE LAYERS. IX. DISTRIBUTION
FUNCTIONS IN A MULTICOMPONENT LIQUID MIXTURE -U-
AUTHOR--(03)-RUSANOV, A.I., KUNI, F.M., BRODSKAYA, YE.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 756-65
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--DISTRIBUTION FUNCTION, FLUID SURFACE, VAN DER WAALS FORCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/2000
GIRC ACCESSION NO--AP0120643
STEP NO--UR/0076/70/044/003/0756/0765
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE RESULTS OF RECENT THEORETICAL STUDIES ON THE DISTRIBUTION FUNCTIONS IN THE SURFACE LAYERS OF SIMPLE LIQS. (K. AND R., 1969), ASYMPTOTIC FORMULAS WERE OBTAINED FOR THE DISTRIBUTION FUNCTIONS OF COMPONENTS IN MULTICOMPONENT LIQ. SURFACE LAYERS AT LARGE DISTANCES FROM THE BOUNDARY SURFACE. THE PARTICULAR CASE FOR VAN DER WAALS FORCES AND FORCES WHICH TAKEN INTO ACCOUNT THE RETARDATION EFFECTS OF ELECTROMAGNETIC INTERACTIONS OF MOLES. IS CONSIDERED. FACILITY: LNINGRAD, GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--ELIMINATION OF THE INFLUENCE OF THE COMPOSITION AND DISPERSITY OF
SAMPLES DURING THE SPECTRAL ANALYSIS OF SULFIDE ORES AND MINERALS BY
AUTHOR--(02)-RUSANOV, A.K., SERDQBBOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 596-601

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SPECTRUM ANALYSIS, SULFIDE, LEAD SULFIDE, ZINC SULFIDE, SODIUM
CHLORIDE, PLASMA ARC, MINERAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/0473

STEP NO--UR/0368/70/012/004/0596/0601

CIRC ACCESSION NO--AP0137564

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0137564

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGES IN SPECTRAL LINE INTENSITIES OF SULFIDE MINERALS DURING THE SPECTRAL ANAL. OF SULFIDE ORES AND MINERALS OF VARYING COMPN. WERE STUDIED BY USING PBS AND ZNS AS MODELS. THE SYSTEMATIC ERRORS OF THE ELEMENT DETNS. ARISING IN THESE ANAL. WERE DESCRIBED. THE MAJORITY OF ADMIXTS. CAUSED AN INCREASE OF LINE INTENSITIES. THE SYSTEMATIC ERRORS WERE ESP. SIGNIFICANT IN THE DETN. OF ELEMENTS WITH LOW IONIZATION POTENTIALS. THE EFFECT OF THE TOTAL COMPN. OF AN ORE ON SPECTRAL LINE INTENSITIES OWING TO CHANGE OF PLASMA COMPN., PLASMA TEMP., AND DIFFUSIONAL ESCAPE OF ATOMS FROM THE ARC WAS RELATIVELY EASY TO REMOVE BY ADDN. OF A BUFFER POWDER CONTG. ELEMENTS WITH LOW IONIZATION POTENTIALS. THE ADDN. OF 40PERCENT NaCl TO ZNS AND PBS SAMPLES DECREASED THE EFFECT OF TOTAL COMPN. AND THE SYSTEMATIC ERRORS WERE VIRTUALLY ELIMINATED. THE USE OF SYNTHETIC STDS. WAS RECOMMENDED.

UNCLASSIFIED

1/2 015
UNCLASSIFIED
TITLE--REACTION OF POLYFUNCTIONAL AROMATIC NUCLEOPHILA WITH DERIVATIVES OF
AROMATIC POLYCARBOXYLIC ACIDS -U-
AUTHOR--(02)-KORSHAK, V.V., RUSANOV, A.L.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 289-94
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIAMINE, DICARBOXYLIC ACID, ELECTRON DENSITY, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0853
CIRC ACCESSION NO--AP0119757
STEP NO--UR/0062/70/000/002/0289/0294
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTIONS OF SUBSTITUTED AROMATIC DIAMINES WITH ARENEDICARBONYL CHLORIDES ARE CLASSIFIED ON THE BASIS OF THE DIFFERENCE BETWEEN ELECTRON DS. OF THE NUCLEOPHILIC ATOMS IN ORTHO AND ADJACENT POSITIONS RELATIVE TO THE NUCLEOPHILIC CENTERS. A CHARACTERIZATION OF REACTIONS OF SUCH REAGENTS WITH SMALL AND LARGE DIFFERENCES IS OFFERED. FACILITY: INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.64:547.551/.554

KATSARAVA, R. D., KORSHAK, V. V., RUSANOV, A. I., KOLESNIKOV, G. S., FEDOTOVA, O. YA., and PARESISHVILI, O. I., Institute of Hetero-organic Compounds of the USSR Academy of Sciences

"Synthesis and Investigation of Polybenzoylenebenzimidazols Based on the Dianhydride of bis-(3,4-dicarboxyphenyl)phenylphosphine Oxide and Some Aromatic Tetraamines"

Moscow, Vysokomolekulyarnyye soyedineniya, Vol 14, No 10, 1972, pp 2065-2078

Abstract: Polybenzoylenebenzimidazols (PBB) were synthesized on the basis of the dianhydride of bis-(3,4-dicarboxyphenyl)phenylphosphine oxide and some bis-(o-phenylenediamines). A comparative study was made of the properties of the PBB and polyimides obtained on the basis of the above-mentioned dianhydride by solid-phase cyclodehydration of prepolymers. The PBB synthesized by cyclization of polyaminoamide acids in the solid state are insoluble in all of the solvents used. The data from studying model reactions indicate that PBB obtained by solid-phase cyclization of polyaminoamido acids have a three-dimensional structure. The possible reactions for the formation of the three-dimensional polymers and a method of obtaining PBB soluble in

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.. USSR

KATSARAVA, R. D., et al., Vysokomolekulyarnyye soyedineniya, Vol 14,
No 10, 1972, pp 2065-2078

organic based on the dianhydride of bis(3,4-dicarboxyphenyl)phenylphosphine
oxide are proposed. The infrared and nuclear magnetic resonance spectra of
the synthesized polymers are discussed, and their solubilities in seven
organic solvents are tabulated.

2/2

1/2 017
UNCLASSIFIED
TITLE--MAGNETIC FIELD RECOMBINATION OF ELECTRONS AND DONORS -U-
PROCESSING DATE--30OCT70
AUTHOR--(02)-POKATILOV, YE.P., RUSANDV, M.M.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1254-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETIC FIELD, ELECTRON RECOMBINATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0920
STEP NO--UR/0181/70/012/004/1254/1256
CIRC ACCESSION NO--AP0121522
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM WAS CONSIDERED OF THE EFFECT OF A MAGNETIC FIELD ON THE MAGNITUDE OF THE TRANSVERSE CAPTURE OF ELECTRONS BY DONORS. IMPURITY ELECTRONS WERE CONSIDERED TO BE REMOVED FROM THE LOCALIZED STATES BY AN EXTERNAL FIELD (E.G., LIGHT) AND TO COME TO THERMAL EQUIL. WITH THE LATTICE AND RECOMBINE. WAVE FUNCTIONS WERE OBTAINED FOR THE DISCRETE SPECTRUM IN TERMS OF THE ORTHOGONAL FUNCTIONS OBTAINED BY THE VARIATION METHOD. THE RECOMBINATION CROSS SECTION INCREASES WITH INCREASING FIELD. FACILITY: KISHINEV. GOS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

Magnetohydrodynamics

USSR

IVANOV, A. A., KOZOROVITSKIY, L. L., RUSANOV, V. D., SAGDEYEV, R. Z., and SOBOLENKO, D. N.

"Experimental Observation of Electron Shock Waves in a Collisionless Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

Abstract: Experimental proofs of the existence of a stationary heat discontinuity (an electron shock wave) in a collisionless plasma are discussed and its parameters are interpreted in accordance with the theory. The structure of a thermal wave front that was obtained with an internal diamagnetic probe introduced into the chamber in hydrogen and argon discharges is shown. The initial plasma was produced by two high-frequency generators inside a glass tube of diameter 8 cm and length ≈ 250 cm in a longitudinal homogeneous magnetic field of the order of 0.5-5 koe. The initial gas pressure varied in the range $4-10 \cdot 10^{-4}$ torr and the charge particle concentration was $2 \cdot 10^{13} \text{ cm}^{-3}$, while the initial electron temperature was 10 ev. Local plasma heating up to electron temperatures of ≈ 300 ev was achieved with a narrow coil that generated a skew magnetosonic wave of large amplitude. The structure shows that there exists a region of values where a wave nT of the shock type with

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USSR

IVANOV, A. A., et al., Pis'ma v Zhurnal Eksperimental'nov i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

a fairly steep pressure drop is formed. The velocity of this wave D depends on the mass of the gas ions and drops by approximately a factor of 2 upon changing to a discharge in argon. A similar wave structure was obtained with measurements with a specially designed double electric probe. Controlled experiments made on plasma afterglow with an electron temperature of ~ 0.5 eV showed that the length of the front and the wave velocity hold constant--i.e., are independent of the initial temperature -- but that the detailed structure of the front varies somewhat. Analysis of the expression for the velocity of the thermal wave shows that velocity should be a function of the mass of the ions, $\sqrt{1/M}$. Experiments with a xenon plasma showed that the wave velocity also decreases in accordance with this relationship. The width of the thermal wave front is found by taking into account the fact that the current velocity of cold electrons is dependent on the potential produced by hot electrons. A method for determining the density profile of the hot electrons is indicated. The authors claim that the analysis proves that a stationary electron shock wave exists in a collisionless plasma and note that such a shock wave can arise also in other situations, such as in the effective attenuation of a relativistic high-current beam in a plasma.

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USSR

IVANOV, A. A., RUSANOV, V. D., and SACDEYEV, R. Z.

"Electron Shock Waves in Collisionless Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 12, No 1, 5 July 1970, pp 29-31

Abstract: High concentrations of hot electrons tend to dissipate and cold electrons flow inward to compensate the charge in a plasma, since the ions do not have sufficient time to move. A stationary moving density jump of hot electrons can develop under conditions similar to those for a shock wave. The motion of the cold electrons in the electrical field generated by the hot electrons is described as in the theory of anomalous resistance.

The slope, thickness, and velocity of the shock wave are calculated. In general, the physical state of the front indicates the distribution function of the hot electrons. Heat can propagate through a collisionless plasma with the formation of a steep-fronted shock wave. A similar effect can occur when a plasma is heated by a strong relativistic beam. Orig. art. has 3 refs.

1/1

1/2 030
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--STUDY OF HEAT FLUXES IN A PULSED PLASMA ACCELERATOR -U-
AUTHOR-(04)-RUSANOV, V.P., SAFRONOV, B.G., VERESHCHAGIN, V.L., POPOV, N.P.
COUNTRY OF INFO--USSR
SOURCE--INZH. FIZ. ZH.; 18: 534-7 (MAR 1970)
DATE PUBLISHED----MAR 70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PLASMA ACCELERATOR, PLASMA JET, ELECTRODE PROPERTY, ENERGY SPECTRUM, TEMPERATURE MEASUREMENT, PLASMA MEASUREMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1200
STEP NO--UR/0170/70/0137000/0534/0537
CIRC ACCESSION NO--AP0124854
UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0124854

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PULSED OPERATION OF AN EROSION TYPE PLASMA ACCELERATOR, THE THERMAL STATE OF STRUCTURE ELEMENTS IS DETERMINED AND THE PARAMETERS OF THE PLASMA JET ARE MEASURED. THE INNER ELECTRODE IS SHOWN TO HAVE THE HIGHEST TEMPERATURE. WITHIN THE OPERATION OF THE ACCELERATOR, AN INTENSIVE RISE IN DIELECTRIC TEMPERATURE TAKES PLACE RESULTING IN CHANGES IN THE PLASMA JET PARAMETERS. ESTIMATION OF THE ENERGY DISTRIBUTION IN A DISCHARGE WAS CARRIED OUT FROM THE MEASUREMENT RESULTS.

UNCLASSIFIED

021
TITLE--THE AUDITORY FUNCTION IN HYPERTENSIVE VASCULAR DISEASE -U-
AUTHOR--RUSANOVA, N.P.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OTORINOLARINGOLOGII, 1970, NR 3, PP 30-34
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--AUDITION, HYPERTENSION, MEDICAL EXAMINATION, VASCULAR INJURY,
OTOLARYGOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1252
CIRC ACCESSION NO--AP0107728
STEP NO--UR/0607/70/000/003/0030/0034
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0107728

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

A COMPLEX AUDIOLOGICAL EXAMINATION OF 100 PATIENTS SUFFERING FROM HYPERTENSIVE VASCULAR DISEASE WAS CARRIED OUT. THE AUTHOR EMPLOYED THRESHOLD TONAL AUDIOMETRY, THE PHENOMENON OF LOADNESS INCREASE BY THE DIFFERENTIAL THRESHOLD OF SOUND INTENSITY, SPEECH AUDIOMETRY ACCORDING TO AERIAL AND BONE CONDUCTION, DETERMINED THE THRESHOLDS OF UNDIFFERENTIATED SPEECH, 50PERCENT AND 100PERCENT OF SPEECH AUDIBILITY. DIFFERENT DEGREES OF INCREASE OF TONAL HEARING THRESHOLDS IN 89PERCENT OF PATIENTS AND A DISTURBANCE OF SPEECH AUDIBILITY IN 78PERCENT OF PATIENTS WERE REVEALED. THE CHARACTER OF TONAL AND SPEECH CURVES WERE CHARACTERISTIC FOR AFFECTION OF SOUND PERCEPTION. THE DEGREE OF DETERIORATION OF HEARING TO TONES AND SPEECH DEPENDED UPON THE STAGE OF HYPERTENSIVE VASCULAR DISEASE. SPEECH AUDIBILITY ACCORDING TO BONE CONDUCTION IN THE MAJORITY OF PATIENTS WITH THE SECOND AND THIRD STAGES OF HYPERTENSIVE VASCULAR DISEASE WAS MORE INFERIOR THAN ACCORDING TO AERIAL CONDUCTION. AN ANALYSIS OF DATA OF TONAL THRESHOLD, SUPRALIMINAL AND SPEECH AUDIOMETRY HAS SHOWN THAT IN PATIENTS SUFFERING FROM HYPERTENSIVE VASCULAR DISEASE THERE ARE NOTED RETROLABYRINTINE AFFECTION OF HEARING OF THE TYPE OF COCHLEAR NEURITIS, CURTICAL OTOSCLEROSIS AND THEIR COMBINATION. FACILITY: KAFEDRY LOR BOLEZNEY SEMIPALATINSKOGO MEDITSINSKOGO INST.

UNCLASSIFIED

USSR

UDC 621.785:666.152.001.4

24

STARODUBOV, K. F., SAVENKOV, V. YA., SPIVAKOV, V. I., STOLEFAKOV, M. A.,
GORBATOV, V. I., and RUSETSKAYA, M. I.

"Heat Treatment of Steel Plates"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4, (70),
Jul-Aug 71, pp 41-43

Abstract: Workers of the Institute of Ferrous Metallurgy and the Zhdanov Metallurgical Institute have developed a method and facility for a new type of heat treatment of steel plates guaranteeing high rates and uniformity of cooling. Results of investigations carried out under laboratory and industrial conditions on steel plates of different thicknesses (3-28 mm) and brands (3, 20sp, 3 sp, and 14G2SAF) are discussed. An experimental-industrial lot of 10-mm-thick plates of 14G2SAF steel was heat-treated up to the yield point of $\sigma = 60-65 \text{ kg/mm}^2$. Welded joints of 14G2SAF steel showed a loss of strength of 1-3% after welding. Four illustrations, two tables, two biblio. refs.

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172 021
UNCLASSIFIED
TITLE--SOME IMMUNOLOGIC ASPECTS OF THE MYOCARDIAL INFARCTION AND OF
STENOCARDIA ACCORDING TO THE IMMUNOSORPTION REACTION FINDINGS -U-
AUTHOR--RUSETSKAYA, V.G.
COUNTRY OF INFO--USSR
SOURCE--ZDRAVOOKHRANENIYE BELORUSII, 1970, NR 4, PP 51-55
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART DISEASE, ANTIBODY, ATHEROSCLEROSIS, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0908
CIRC ACCESSION NO--AP0126567
STEP NO--UR/0477/70/000/004/0051/0055
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEALS WITH THE FINDINGS ON THE STUDY OF ORGANO SPECIFIC ANTI INFARCTION ANTIBODIES IN THE BLOOD OF 44 PATIENTS WITH ATHEROSCLEROTIC CARDIOSCLEROSIS AND 15 PERSONS OF THE CONTROL GROUP. IN THE LATTER AND ALSO IN THE GROUP OF PATIENTS WITH ATHEROSCLEROTIC CARDIOSCLEROSIS WITHOUT STENOCARDIAL FITS ONLY NORMAL CARDIAL ANTIBODIES HAVE BEEN DETECTED. AT THE SAME TIME IN THE BLOOD OF PATIENTS WITH MYOCARDIAL INFARCTION ALONGSIDE WITH A SHARP INCREASE OF THE NORMAL ANTIBODY AMOUNT A HIGH CONTENT OF THE ORGANO SPECIFIC ANTI INFARCTION ANTIBODIES HAS BEEN FOUND. A DEFINITE DEPENDENCE BETWEEN THE ANTIBODY QUANTITY AND DYNAMICS AND THE MYOCARDIAL INFARCTION CLINICAL PICTURE HAS BEEN NOTICED. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII MINSK. MEDITSINSKOGG INSTITUTA AND 4-YA KLINICHESKAYA BOL'NITSA G. MINSK.

UNCLASSIFIED

•ULSR•

UDC: 621.376

ADRIANOVA, I. I., BEREZHNOY, A. A., NESTEROVA, Z. V., and ~~RUSETSKAYA, V. S.~~

"Ultra High-Frequency Light Modulation by Electrooptical Effects in a Zinc Selenide Crystal"

Moscow, Kvantovaya elektronika, No 7, 1972, pp 81-82

Abstract: It is asserted that cubic crystals have a number of advantages for use as light modulators due to the absence of a natural anisotropy and the presence of a linear electrooptical effect. Because of the first of these advantages, the optical system can be simplified and the modulator aperture increased; because of the second, the crystals are especially promising as light modulators at a uhf rate. This brief communication describes experiments performed with a uhf light modulator using a ZnSe crystal, which has a cubic structure, set in a waveguide. The latter is of rectangular cross section measuring 42 by 2 mm, and the crystal dimensions are 14 X 4 X 2 mm. A diagram of the device is shown. The frequency used in the experiments was 2600 MHz, and the uhf voltage applied to the modulator was obtained from a standard GZ-10A oscillator operating in pulse mode at a repetition rate of 1 kHz, with a duty cycle of $\frac{1}{2}$ and a power level of less than 1 watt. The authors find that use of the $\frac{1}{2}$

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ADRIANOVA, I. I., et al, Kvantovaya elektronika, No 7, 1972,
pp 81-82

cubic crystal in this application is far more advantageous than
the use of other types. They conclude by thanking E. H. Duben-
skiy and V. A. Sokolov for preparing the ZnSe crystals.

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- 124 -

Acc. Nr: **AP0044700**

Ref. Code: **OR0497**

PRIMARY SOURCE: *R* **Klinicheskaya Meditsina, 1970, Vol 48,**
Nr 1 , pp 49-55

**THE CLINICAL PICTURE AND DIAGNOSIS OF ANGINA
ABDOMINALIS**

A. V. Pokrovskiy, B. I. Bragin, I. I. Rushanov, L. S. Zingerman
Summary

Among 281 patients with obstructive lesions of the abdominal aorta and its branches the authors revealed 47 persons with occlusions of the visceral vessels; of this number in 20 cases they occurred as the result of nonspecific portoarteritis and in 27 — of atherosclerosis; only in 24 patients there were clinical manifestations of the disease.

As a rule, the clinical picture of angina abdominalis occurred in affection of two or three branches; only in isolated lesion of the splanchnic artery there were definite clinical manifestations. Routine clinical examination enables in most cases to suspect the true nature of the pathology and the final diagnosis is established during X-ray investigation (preferably serial) in the dorsoventral and lateral projections.

REEL/FAME
19771435

0244

USSR

UDC 621.55

RUSHCHINSKIY, V. M., FRENKEL', A. Ya., and FRIDMAN, L. I., Central Scientific Research Institute of Large-Scale Automation

"A Method of Detecting Faulty Data Channels in a System for Monitoring a Technological Operation"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Aug 71, Author's Certificate No 309362, Division G, filed 24 Feb 69, published 9 Jul 71, p 188

Translation: This Author's Certificate introduces: 1. A method of detecting faulty data channels in a system for monitoring a technological operation such as a boiler installation by measuring the output parameters of the operation, computing the values of the same parameters by means of a mathematical model of the process being monitored, and comparing the two. As a distinguishing feature of the patent, in order to improve the reliability of the monitoring system when the discrepancy between the measured and calculated values of several output parameters of the operation goes beyond the permissible value, the controlling and disturbing actions disconnected from the inputs of the model are sequentially compared with those calculated on the model, and the defect is determined in the measurement channel for the input quantity for 1/2

USSR

RUSHCHINSKIY, V. M., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Aug 71, Author's Certificate No 309362, Division G, filed 24 Feb 69, published 9 Jul 71, p 188

which the difference between the computed and measured values is greater than a preassigned limit. Before the data channel is restored to working order, the appropriate calculated input signal of the model is substituted for the pickup signal for the given parameter. 2. A modification of this method is distinguished by the fact that when the discrepancy between the measured and calculated values of one of the output parameters of the operation goes beyond the permissible amount, the defect of the measurement channel for the given output parameter is determined, and the appropriate signal of the model is substituted for the signal from the pickup.

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USSR

RUSHCHUK, V. I.

UDC 669.71.008

"Saving of Electrical Power During Aluminum Production"

Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii (All-Union Seminar of Electrical Engineers of the Enterprises of Non-ferrous Metallurgy on the Question of Economizing on Electrical Power -- collection of transactions), Moscow, 1970, pp 35-38 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G90)

Translation: The possibilities are considered for reducing power consumption at plants for the USSR by reducing the losses for the conversion of direct current into alternating current, reducing the losses in the heavy leads of electrolytic reduction cells and in the overall leads, and reducing the losses in the electrolytic reduction cell, related to the technology of electrolytic reduction cell and its design.

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- 19 -

12 013
UNCLASSIFIED
TITLE--LEAD ACID BATTERY ELECTRODES -U-
PROCESSING DATE--16OCT70
THOR-(05)-YEMELYANOV, N.M., SMOLKOVA, V.S., ROMANOVA, I.L., SELITSKIY,
I.A., RUSIN, A.I.
COUNTRY OF INFO--~~USSR~~
SOURCE--U.S.S.R. 262,200
REFERENCE--OTDRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
PIC TAGS--PATENT, BATTERY ELECTRODE, LEAD, LEAD OXIDE, SULFURIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
COPIES REEL/FRA--1990/1782
STEP NO--UR70482/70/000/000/0000/0000
RC ACCESSION NO--AA0109743
UNCLASSIFIED

12 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

RC ACCESSION NO--AA0109743

STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ELECTRODES ARE PREPD. BY
MIXING PB OXIDES WITH H SUB2 SO SUB4, SMEARING THE MIST. ONTO A LATTICE,
DRYING, FORMING, REPEATED DRYING, AND INTRODUCING A BINDER. THE DRIED
OUT PLATES ARE SATD. IN THE BINDER SOLN., WITH SUBSEQUENT REMOVAL OF THE
SOLVENT.
INSTITUTE. FACILITY: SCIENTIFIC RESEARCH STORAGE BATTERY

UNCLASSIFIED

USSR

R
UDC 621.385.633

BOGOMOLOV, G. D., BORODKIN, A. I., KUSHCH, V. S., LEVIN, G. YA., RUSIN, F. S.,
CHURILOVA, S. A.

"Investigation of the Excitation System of the 'Comb' Type in an Orotron Regime
and a Backward-Wave Tube Regime"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology,
Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 97-102
(from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A141)

Translation: An experimental comparison is made between the work of an orotron
[microwave oscillator with oscillatory system in the form of an open resonator--
Transl.] and a backward-wave tube. The comparison was accomplished on a model of
a millimeter band oscillator in which backward-wave tube and orotron oscillations
were excited. The dispersion and control characteristics of both forms of oscil-
lations were investigated and also the levels of the power being generated were
compared. The stability of both forms of collector [K] is evaluated. 9 ref. Sum-
mary.

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USSR

UDC 621.385.633

BOGOMOLOV, G. D., BORODKIN, A. I., KUSHCH, V. S., LEVIN, G. YA., RUSIN, F. S.,
CHURILOVA, S. A.

"Investigation of the Excitation System of the 'Comb' Type in an Orotron Regime
and a Backward-Wave Tube Regime"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology.
Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 97-102
(from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A141)

Translation: An experimental comparison is made between the work of an orotron
[microwave oscillator with oscillatory system in the form of an open resonator--
Transl.] and a backward-wave tube. The comparison was accomplished on a model of
a millimeter band oscillator in which backward-wave tube and orotron oscillations
were excited. The dispersion and control characteristics of both forms of oscil-
lations were investigated and also the levels of the power being generated were
compared. The stability of both forms of collector [K] is evaluated. 9 ref. Sum-
mary.

1/1

KUSIN, L.YU.

MOLECULAR BEAMS

JPRJ CIVC 12 Nov. 74 UNCL 541.1
 ELEMENTARY CHEMICAL REACTIONS IN MOLECULAR BEAMS
 [Article by Candidate of Chemical Sciences L. Yu. Kusin, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 12, December 1973, pp 40-47]

Elementary chemical reactions constitute the basis of chemical kinetics. Their study is extremely important, as without it progress of many leading branches of science and technology would be impossible.

To give a quantitative description of elementary reactions it is necessary above all to distinguish them from a number of other physical and chemical processes taking place in an investigated system. Very great success in that direction has been achieved effectively differentiating the paths of formation of the present time considerable experimental methods, which have permitted accumulation in the form of rate constants of elementary reactions and their temperature dependences. Thanks to that, by of our knowledge of those processes it has become more and more clear that the real picture of elementary chemical formations is incomparably more complex than can be judged on the basis of the rate constant expressed in Arrhenius form.

The methods of chemical kinetics developed for the establishment of rate constants, that is, macroscopic values, are unsuitable for determination of the microscopic values of elementary acts, for example in energetic character, processing of experimental data. The development of the theory of elementary reactions, which requires considerably more detailed information than traditional experiments "in the flask" are capable of giving, stimulated the creation of methods new in principle for the investigation of elementary acts, for the adequacy of a theoretical model of a process and the possibility

of the extension of that model to a more or less extensive class of reactions will depend very substantially on the degree of detail.

The growth of new technology which uses of greater non-equilibrium conditions of the reacting medium also requires knowledge of completely new characteristics of elementary reactions, as the rate constants determined in the presence of a Maxwell-Boltzmann distribution proved to be unacceptable under conditions of high and superhigh temperatures, the presence of hard and penetrating radiation and other factors creating a non-equilibrium energy distribution.

It has become necessary to obtain a description of the elementary processes with consideration of individual states of the reagents participating in them and the states of the elementary products. Those characteristics must be readily comparable with each other apart from dependence on the experimental conditions in which they have been determined. Consequently, the experimental procedure must contain secondary chemical processes, energy transfer or change of the state of the reagents before the reaction and of the products after its completion and, finally, make it possible to determine the states of both the reagents and the products.

The conducting of a chemical reaction in molecular beams meets the indicated requirements. The particles constituting the beam do not collide with one another, and so their state can change only as a result of collision with particles of a second beam. In the zone of intersection of two beams of reagents each particle experiences only one collision, after which it is knocked out of the zone of interaction.

In principle each such collision can be accompanied by either elastic scattering, during which only the direction of motion of the particles changes and their internal energy state proves to be unchanged, or by inelastic scattering, when the particles lose or acquire some portion of the internal energy, or by chemical reaction, when reaction products in certain quantum states form in place of the initial reagent particles.

A detector registers the result of a collision by determining the direction of the main flow of the reaction products.

Figure 1 presents a diagram of the first successful experiment on the conducting of a chemical reaction between a beam of K atoms and a molecular beam of HDI, accomplished in 1956 in the USA by L. Taylor and S. Datz. Since the time of that pioneering work the experimental technique has made a

AA0030270

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

236806 PHOTO-ELECTRIC CONTROL FOR INDUCTION HEATING

of metals by the proposed method improves control accuracy, reduces waste, and ensures good reproducibility in high-frequency heat-treatment under conditions of random variations in heating rate. The desired temperature process in induction heating is well understood, but the cycle can be distorted by random errors (voltage variations, uneven distribution of heat, etc.). The proposal envisages a temperature sensor combined with a delay element in the form, for example, of an inductive amplifier operating valve and relay circuitry to compare the amplifier output with a reference voltage set to correspond to some chosen temperature. The control is effective for slow heating rates (furnace heating) and with rates proper to induction heating is responsive to some higher temperature, the more rapid the heating, thus compensating for the rate. 6.2.67 as 1131186/18-10.P.I.RUSIN et alia.(1.7.69) Bui 7/3.2.69. Class 42i. Int.Cl.G 01k.

AUTHORS: P.I. Rusin, A.I. Smolyaninov, V.M. Shapkin, V.N. Pustovyt

19690162

USSR

KARPENKO, G. V., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 364-367

strength. The endurance limit of specimens with a coating about 0.008-0.010 mm thick (nickel-plating for 0.5 hour) increased 45 percent compared to uncoated specimens and specimens nickel-plated without subsequent heat treatment. An increase in the coating thickness to 0.040-0.045 mm led to a further rise in the endurance limit to almost 70 percent. The effect of a rise in endurance declines somewhat with a further increase in the coating thickness to 0.070-0.075 mm (nickel-plating for five hours). In the case of the simultaneous action of cyclic strains and a corrosive medium (3-percent aqueous solution of sodium chloride), chemically deposited nickel is not an effective means of protection against corrosion-fatigue failure of aluminum alloy D16.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--AUTOMATIC CONTROL AND REGULATION OF PH DURING THE PRELIMINARY
TREATMENT OF ANTIBIOTIC CULTURE LIQUIDS -U-

AUTHOR--(04)-RUBAN, YE.A., RUSIN, V.N., ZHUKOVSKAYA, S.A., LINKOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM.--FARM. ZH. 1970, 4(1), 54-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, HYDROGEN ION CONCENTRATION, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1993/0324

STEP NO--UR/0450/70/004/001/0054/0057

CIRC ACCESSION NO--APJ113250

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16JCT70

CIRC ACCESSION NO--AP0113250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMATIC CONTROL OF THE PH OF MEDIA USED TO PRODUCE ANTIBIOTICS ALLOWS REMOVAL OF IMPURITIES AND FACILITATES FILTRATION. A DEVICE IS DESCRIBED FOR THE AUTOMATIC CONTROL OF PH TO WITHIN 1.8-2.5 UNITS USING 45PERCENT H SUB2 SO SUB4, 30PERCENT NAOH, AND DRIED CACL SUB2. FACILITY: VSES. NAUCH.-ISSLED. INST. ANTIBIOT., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 576.3:612.017:615.5

RUSIN, V. YA.,

"The Effect of Dibazole on the Resistance of Cells to Damage", pp 58-61, Sintez Belka i Rezistentnost' Kletok, "Nauka, (Protein Synthesis and Cell Resistance), Leningrad, 1971, 104 pp

Abstract: In experience on white rats it was shown that a prolonged enteral introduction of a 10 mg/kg dose of dibazole reduces the capability of a number of tissues to absorb neutral red (at rest and after ethanol treatment), increases the retention time of the excitability of the tibial and sural muscles in an altered media, and increases the osmotic resistance of white blood corpuscles. From these data it follows that dibazole increases the resistance of cells. It was also established that increasing the resistance of cells correlates with increasing the resistance of the entire organism.

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- 122 -

USSR

UDC 612.017

RUSIN, V. YA., Chair of Physiology, Yaroslavl Pedagogical Institute

"Significance of the Conditions of Exposure to Adaptogenic Factors in Shaping the Spectrum of Nonspecific Resistance"

Leningrad, Fiziologicheskii Zhurnal SSSR, imeni I. M. Sechenov, Vol 57, No 2, 1971, pp 304-309

Abstract: Experiments on rats and mice showed that there are marked differences in the state of nonspecific resistance created by physical exercise, adaptation to cold, or treatment with pharmacological agents (e.g., benzimidazole). The differences are due not only to the specific effects peculiar to each factor, but also to the conditions under which the factors operate. (1) The nature of the adaptation regime (intermittent or round-the-clock); (2) Intensity and duration of the training influences; (3) Overall duration of the adaptogenic factor; (4) Size of the functional load; (5) and criterion used to judge resistance. Consequently, the spectrum of unfavorable influences to which resistance is increased is not necessarily constant for each of the adaptogenic factors. It may widen or narrow with a change in the conditions under which the factors operate.

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- 85 -

USSR

UDC 591.147

BUSIN, V. IA., Recommended by the Department of Human and Animal Physiology,
Yaroslavskiy Pedagogic Institute

"Results of a Post-Mortem Study of Endocrine Glands and Other Organs of
Animals Exposed to Muscle Training, Cold Adaptation or Treated With Dibazol"

Moscow, Biologicheskii Nauki, No 4, 1971, pp 33-38

Abstract: It had been found previously that under the effect of muscle training, cold adaptation, and with the administration of an adaptogenic pharmaceutical such as dibazol, a state of nonspecific, enhanced resistance is frequently produced during which the body becomes resistant toward many harmful environmental effects such as cooling, overheating, toxic materials, etc. An attempt was made to compare the gravimetric changes in organs of 296 white mice and 285 rats which had been subjected to the action of factors producing an adaptation or similar state: muscle training, drilling or administration of dibazol in a dose of 1 mg/kg daily administered subcutaneously or peritoneally. In longer experiments (exceeding one month) the preparation was administered with the drinking water (1-2 mg/kg per day). At the end of seven test series the animals were sacrificed with chloroform and the following organs were removed from them for examination: adrenal glands, thymus,
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USSR

RUSIN, V. YA., Biologicheskii Nauki, No 4, 1971, pp 33-38

testes, heart, kidneys, spleen, liver, and gastrocnemius muscle. The weight of an organ was considered to be an extremely sensitive index by which certain changes can be determined earlier than histological analysis would detect them. In addition, in one test series the water content in percent and dry residue of the internal organs, skeletal muscles and skin were determined. In two test series, the organs were studied histologically. It was found that after relatively short periods of muscle training, cold adaptation or introduction of dibazol (3-3.5 weeks), the animals exhibited signs of excitation of the pituitary-adrenal gland system: an increase in the weight of the adrenal glands, a decrease in the weight of the thymus and spleen. After three months, the weight of these organs returned to normal in all animals, and they could adapt better to the cold under more severe conditions. Histological study of the adrenal cortex in animals which had received dibazol showed that excitation lasted till the end of the sixth week. No significant changes in the histological structure of the internal organs were detected. The variation in muscular weight was extremely moderate for a production of hypertrophy in the skeletal muscles, which carry the main load during the training period. The water content of the skin dropped sharply in cold-adapted animals.

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1/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--SIGNIFICANCE OF THE NERVOUS, HUMORAL AND LOCAL FACTORS FOR THE
ORGANISM'S UNSPECIFIC RESISTANCE -U-

AUTHOR--RUSIN, V.YA.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 5, PP 775-781

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COLD ADAPTATION, EXERCISE, ADRENAL GLAND, TISSUE PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/1613

STEP NO--UR/0239/70/056/005/0775/0781

CIRC ACCESSION NO--AP0127104

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127104

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS ON RATS AND MICE SHOWED BOTH UNSPECIFIC AND SPECIFIC RESISTANCE OF THE ORGANISMS TO INCREASE AFTER PHYSICAL TRAINING AND ADAPTATION TO COLD, WHICH RESEMBLES THE STATE DEVELOPING AFTER DIBAZOL ADMINISTRATION. PHARMACOLOGICAL ANALYSIS EMPHASIZED IMPORTANCE OF THE RETICULAR FORMATION FOR THE RESISTANCE. TWO PHASES WERE DISCERNED IN CHANGING STATE OF THE PYCOPHYSIS, ADRENAL SYSTEM DURING THE PHYSICAL TRAINING AND THE ADAPTATION: INTENSIFIED FUNCTIONING OF THE SYSTEM WAS FOLLOWED BY ITS NORMALIZING. DIBAZOL ADMINISTRATION INCREASED REACTIVITY OF THE SYSTEM WHILE HAVING NO EFFECT ON ITS AT REST. THE ORGANISM'S INCREASING RESISTANCE CORRELATED WITH THE TISSUES' INCREASED RESISTANCE. FACILITY: PEDAGOGICLA INSTITUTE, YAROSLAVL.

UNCLASSIFIED

USSR

UDC: 621.373.029.52(088.8)

ALEKSANDROV, V. P., RADIYEVSKIY, L. V., RUSIN, Yu. S., KUZNETSOV, V. K.

"A Thyristorized Series Inverter"

USSR Author's Certificate No 262253, filed 18 Nov 68, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D498 P)

Translation: This Author's Certificate introduces a thyristorized series inverter which contains commutating capacitors and an output transformer. To improve efficiency and reliability, the primary winding of the output transformer is connected between the cathode of one thyristor and the anode of another, and the commutating capacitors are connected between the other leads of the thyristors and the centertap of the same winding. The proposed inverter may be used as the output stage of an oscillator operating in the audio frequency range. V. P.

USSR

UDC 546.651:542.61:547.558

RUSINA, M. N., POLIKARPOV, Yu. M., YAROSHENKO, G. F., and TIMAKOVA, L. M.

"Aminosubstituted Phosphine Oxides as Extractants of Rare Earth Elements"
Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 238-242

Abstract: Synthesis of aminosubstituted phosphine oxides containing phosphoryl and amino groups in the molecule was carried out. Their ability to extract rare earth elements [REE] was studied. The structure of such reagents makes it possible to form chelate rings with metal salts, with both functional groups participating; this makes the complexes very stable and selective. It was shown that substituting an octyl radical for an ethyl group increases the extractational capacity of the material, probably due to the increase in the basicity of the nitrogen atom and better solubility of the complex in the organic phase. β -Aminosubstituted phosphine oxide extracts the REE much better than α -aminosubstituted ones, due to a greater strength of the six membered chelate ring as compared to a five membered one. The coefficient of extraction of REE by above reagents is about 0.1, while for the Ca^{2+} , Mg^{2+} , Al^{3+} , Fe^{3+} and Cr^{6+} they are less than 0.01.

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USSR

UDC 539.374

PANYAYEV, V. A., and RUSINKO, K. N.

"On Deformations and the Failure of Semibrittle Solids"

Frunze, Deformatsiya Neuprugogo Tela, 1970, pp 98—109

Abstract : Results of experimental investigation are presented of the deformation process and the failure of semibrittle materials on the example of grey pig iron mark 6h 15-32. The investigations were carried out in a wide range of types of the plane stressed condition by proportional loading. Relations presented in a previous publication of the authors ("Stress-Strain Relations for Semibrittle Solids", Technical Installation Trust, No 6, 1967) were used for description of the deformation. It is noted that the shear modulus G , determined by initial deformations, depends on the character of stressed condition. Therefore, a new argument of the function G is introduced which permits to reflect the mentioned peculiarity. In this case, theoretical stress-strain

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PANYAYEV, V. A. and MUSINKO, K. N., Deformatsiya Neuprugogo Tela, 1970,
pp 98-109

diagrams are in good conformity with experimental data. The magnitude of the relative volume desintegration at the moment of failure was calculated for each test program and its dependence on the character of the stressed condition was established. Four illustrations, eight formulas, one table, 25 biblio. refs.

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USSR

UDC: 539.4

PANYAYEV, V. A., RUSINKO, K. N.

"On Deformations and Destruction of Semi-Brittle Bodies"

V sb. Deformatsiya neuprug. tela (Deformation of an Inelastic Body--collection of works), Frunze, "Ilim", 1970, pp 98-109 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4V977)

Translation: The paper presents the results of an experimental study of the process of deformation and destruction of semi-brittle materials based on the example of SCh 15-32 gray cast iron. Tests were done in a broad range of forms of the plane stressed state under proportional loading. It is noted that the shear modulus G determined at initial deformations depends on the form of the stressed state. Therefore a new argument of the function G is introduced which reflects this singularity. In this connection, the theoretical stress-strain diagrams are in satisfactory agreement with the experimental diagrams. For each test program, the relative volumetric disintegration at the instant of fracture is calculated. It is established that this quantity depends on the form of the stressed state. Bibliography of 25 titles. Authors' abstract.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--AUTOMATIC CONTROL OF THE PREPARATION OF A CATALYST FOR PRODUCING
SYNTHETIC FATTY ACIDS -U-
AUTHOR-(04)-BESITSKIY, R.M., MASLOVA, N.M., RUSINOV, I.YE., PLATUKHIN,
V.M.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 38-40
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AUTOMATIC CHEMICAL PROCESS CONTROL, MANGANESE, CATALYST,
HYDROGEN ION CONCENTRATION, FATTY ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0437

STEP NO--UR/0138/70/000/002/0038/0040

CIRC ACCESSION NO--AP0119373

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTOMATION IS BASED ON PH CONTROL IN THE REACTION MIXT. FOR PREPG. THE MN CATALYST. A PH METER WITH GLASS ELECTRODE IS USED TO CONTROL A CONCN. OF 0.1-0.5PERCENT NAOH IN THE MIXT., THE ABS. ERROR BEING 0.05PERCENT. EXPTL. RESULTS ARE PRESENTED. FACILITY: SHEBEKIN. KHKOMB., SHEBEKINO, USSR.

UNCLASSIFIED

USSR

UDC: 531.862

RUSINOV, M. M., IVANOV, P. D., POPOV, L. Ye., LIVSHITS, E. M., GOL'DBERG, G. R., KUDRYASHOV, A. M., Leningrad Institute of Precision Mechanics and Optics

"A Sighting Tube for Observing Objects in an Aqueous Medium"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328410, Division G, filed 16 Sep 70, published 2 Feb 72, p 143

Translation: This Author's Certificate introduces: 1. A sighting tube for observing objects in an aqueous medium which contains two objective lenses with protective glasses, collective lenses and erecting systems. The tube also contains a commutating flip mirror and an ocular. As a distinguishing feature of the patent, the tube is designed for simultaneous use of the visual optical system and photography of the field of view of the objective lenses. Placed directly in front of the photosensitive film is a three-component system of single positive menisci with concavity facing the object. The three-component system is introduced into the beam path by an auxiliary beam-splitting flip mirror. 2. A

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RUSINOV, M. M. et al., USSR Author's Certificate No 328410


modification of this tube distinguished by the fact that provision is made for compensating for rotation of the image and correcting for chromatic aberrations. Placed in front of the ocular is a PK-0° prism and a plane-parallel plate with chromatic radius.

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USSR

UDC: 621.317.715.5


RUSINOV, M. M., GUSEV, L. N., Leningrad Institute of Precision Mechanics and Optics

"An Autocollimation System for Recording Variable Parameters"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 64, patent No 261560, filed 16 Jul 68

Abstract: This Author's Certificate introduces an autocollimation system for recording variable parameters. The system contains a sensing element made in the form of a string-type pickup, an autocollimation section and a photographic registration unit. As a distinguishing feature of the patent, sensitivity is increased by making the string in the sensing element with a reflecting cylindrical surface.

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UR 0482

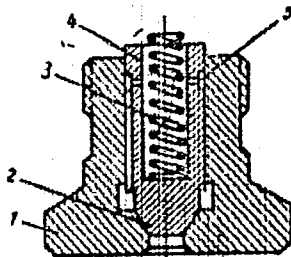
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent,

242601

DIESEL FUEL PUMP CORRECTING SPRUNG

PRESSURE VALVE is designed for simpli-

city, reliability and improved fuel feed stability
and atomisation by being made in the form of a
socket 1 with flat surfaces forming channels with
seat 2. The valve also has a suction ring 4 and
throttling apertures 5.



23.12.66 as 1120575/24-6 P.V. RUSINOV et al.
(25.9.69) Bul. 15/25.4.69. Class 46c², Int. Cl.
F 02f.

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19850882

AA0101200

AUTHORS: Rusinov, R. V.; Lavrova, M. A.; Demchenkov, N. I.; Shokhrina, R. I.; Vysotskiy, Sh. L.; Gringlaz, Ya. A.; Shkarp, D. I.

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19850883

1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE THERAPEUTIC EFFICACY OF HIGH POLYMER HETEROLOGOUS DNA IN DOGS
WITH ACUTE RADIATION SICKNESS -U-
AUTHOR--ROGACHEVA, S.A., LUZANOVA, O.V., KLYZHUK, K.N., RUSINOVA, G.G.,
SHAROVA, E.G.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 44-49
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DOG, RADIATION SICKNESS, DNA, CESIUM ISOTOPE, RADIATION
SOURCE, THYMUS GLAND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1693 STEP NO--UR/0241/70/015/003/0044/0049
CIRC ACCESSION NO--AP0101748

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON 52 DOGS IRRADIATED FROM A¹³⁷CS PRIME137 SOURCE (6 R-MIN) IN DOSES OF 700 AND 750 R. THE AUTHORS DEMONSTRATE THE THERAPEUTIC EFFECTIVENESS OF HIGH POLYMER HETEROLOGOUS DNA OF CALF THYMUS. DNA PREPARATIONS WERE OBTAINED BY THE METHOD OF KAY ET AL. THE THERAPEUTIC EFFECT OF DNA, INTRODUCED INTRAVENOUSLY IN A DOSE OF 15 MG-KG OF BODY WEIGHT, DEPENDED UPON THE TERM BETWEEN IRRADIATION AND INJECTION OF THE PREPARATION. THE GREATEST SURVIVAL (8 OUT OF 11 DOGS) WAS NOTED WHEN THE PREPARATION WAS INTRODUCED 24 HOURS AFTER IRRADIATION. IN DNA INJECTION 3 DAYS OR 30-60 MINUTES AFTER IRRADIATION THE SURVIVAL WAS 6 OUT OF 11 AND 4 OUT OF 12 ANIMALS RESPECTIVELY. IN THE CONTROL GROUP 2 OUT OF 18 DOGS SURVIVED. THE AUTHORS DISCUSS THE RELATIONSHIP BETWEEN THE THERAPEUTIC EFFECT AND TERM OF DNA INJECTION AFTER IRRADIATION.

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USSR

UDC 617-001.28-036.11-092.9-035.272.6:547.963.32

ROGACHEVA, S. A., LUZANOVA, O. V., KLYZHUK, K. N., RUSINOVA, G. G., SHAROVA, E. G.,
and LIBINZON, R. Ye., Institute of Biophysics, Ministry of Health USSR, Moscow

"The Therapeutic Effectiveness of High-Polymer Heterologous DNA in Dogs with Acute
Radiation Sickness"

Moscow, Meditsinskaya Radiologiya, Vol 15, No 3, 1970, pp 44-48

Abstract: A study was made of the effect of high-polymer, heterologous, calf thymus DNA preparations on the course and outcome of acute radiation sickness in dogs. In the experiments, 52 dogs of both sexes, one to four years old, weighing 5-24 kilograms, were subjected to cesium-137 gamma-ray irradiation at a rate of 6 r per minute in doses of 700 and 750 r. The animals were divided into four groups: group one received injections of DNA 30-60 minutes after irradiation, groups two and three received injections 24 and 72 hours after irradiation, respectively, and group four served as the control. The animals were distributed evenly among the groups by sex, weight and initial peripheral blood index. The therapeutic effect was evaluated according to 60-day survival, the average life of nonsurvivors, the clinical picture of acute radiation sickness, and the results of peripheral blood studies. Results of the investigations revealed that intravenous administration of calf thymus DNA increased survival in all experimental groups. Of the 18

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ROGACHEVA, S. A., et al., Meditsinskaya Radiologiya, Vol 15, No 3, 1970, pp 44-48

dogs in the control group, only two (11%) survived, while four of the 12 dogs in group one survived, eight of 11 dogs survived in group two, and six of 11 dogs survived in group three. These results indicate that the optimum time of DNA administration is 24 hours after irradiation. It was determined that the therapeutic effect of DNA, introduced intravenously, depended on the period between irradiation and injection of the preparation.

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- 31 -

USSR

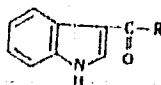
UDC 547.756.07

RUSINOVA, V. N., SMUSHEVICH, YU. I., and SUVOROV, N. N., Moscow Chemical
Technology Institute im. D. I. Mendeleeva

"Synthesis of 3-Acylindols"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973, pp 716-717

A study was made of the acylation of the indolylmagnesiumbromides by acid chlorides. It was determined that using a 1- to 5-fold excess of the indolylmagnesiumbromide resulted in the formation of the 3-acylindols with a 60-80% yield and facilitated their preparation. Six acylindols having the following formula were prepared:



The R group were mostly aryl or alkyl groups. Only the monoacylation product was observed.

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USSR

UDC 547.752.+542.943'95

RUSINOVA, V. N., SMUSHKEVICH, YU. I., KOZIK, T. A., and SUVOROV, N. N.,
Moscow Chemical Technological Institute Imeni D. I. Mendeleev

"Indole Derivatives. LXXX. Novel Oxidative Rearrangement in the Indole Series"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 8, No 8, Aug 72, pp 1735-1739

Abstract: A new oxidative rearrangement was studied in the indole series on the example of the reaction of 3-(α -methylaminobenzyl)indole with KCN in presence of atmospheric oxygen. 2-Cyano-3-benzoyl-indole, 3-benzoylindole and indolyl-3-phenylacetonitrile were obtained as reaction products. The rearrangement to 2-cyano-3-benzoylindole does not occur in an inert atmosphere. It is an inter-molecular rearrangement. It has been shown that indolyl-3-phenylacetonitrile reacts with various nucleophilic reagents forming 2-substituted 3-benzoyl-indoles.

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28 May 71

58

POL/MIL

FPD:CYBERNETICS

40. USSR

RUSITASHVILI, K., correspondent of Izvestiya

"Electronics for Medicine"

SD: FOREIGN PRESS DIGEST
28 MAY 1971

Moscow, Izvestiya, 24 Jan 71, p 4

Translation: A commission of the presidium of the Georgian SSR Academy of Sciences has awarded first prize to a device for preserving bone marrow that was designed by associates of the Institute of Cybernetics of the Republic's Academy of Sciences and physicians of the Tbilisi City Blood Transfusion Station.

A programmed electronic freezer regulates the temperature according to a given program with a high degree of accuracy.

A patent for the device, which was created by Tbilisi scientists, has been purchased by the USA and many other countries.

1/1

1/2 008 UNCLASSIFIED
TITLE--A HYDROFOIL VESSEL, THE KOMETA -U-
AUTHOR--RUSITASHVILI, K.
COUNTRY OF INFO--USSR, UNITED STATES, ITALY, FRANCE
SOURCE--IZVESTIYA, SEPTEMBER 2, 1970, P 3, COLS 5-6
DATE PUBLISHED--02SEP70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HYDROFOIL, SHIPYARD, TRANSPORTATION EQUIPMENT
PURCHASE/(U)KOMETA HYDROFOIL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/1085
CIRC ACCESSION NO--AN0138102
STEP NO--UR/9003/70/000/000/0003/0003
UNCLASSIFIED

USSR

UDC 539.126

SAN'KO, L. A., RUS'KINA, G. Ya., MUKHORDOVA, T. I., TAKIBAYEV, Zh. S., BOOS, E. G.

"Methods of Determining Background Noise"

Alma-Ata, Izvestiya AN Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 6-12

Abstract: An important problem in the analysis of interactions in high-energy situations is the determination of background noise distributions of the effective masses of the particles involved. This paper discusses a method for computing noise distributions, based on experimental data for the angles and impulses of the particles, and demonstrates the possibility of determining the noise by various methods of particle combinations and the formation of known nonresonance combinations. Also examined is the effect of small dip angles of the particles on the form of the noise distribution, information which is essential in the study of particle interactions in nuclear photoemulsions. To investigate all aspects of the method, the authors used random stars modeled at energy levels of 10 Gev and experimental

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0138102

ABSTRACT/EXTRACT--(U) GP-0-

HYDROFOIL VESSEL, THE "KOMETA", BUILT AT THE POTI SHIP REPAIRS PLANT

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SAN'KO, L. A., Izvestiya AN Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 6, Nov-Dec 71, pp 6-12

data of particle angles and energies from four-ray events recorded in nuclear emulsion at an energy level of 20 Gev.

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UDC 539.12

TAKIBAYEV, Zh. S., BOOS, E. G., and RUS'KINA, G. Ya.

"Study of the Properties of the Angular Distribution of Shower Particles in Proton-Nucleon Interaction at 76 Gigaelectron-Volts"

Alma-Ata, Akademii Nauk Kazakhskoy SSR -- Seriya Fiziko-Matematicheskaya, No 2, March-April 1971, pp 67-70

Abstract: Experimental data are presented for proton-nucleon interactions obtained by irradiating photoemulsion layers 6 cm x 10 cm x 200 μ using the internal beam of the Serpukhov accelerator at 76 gigaelectron volts. Data are presented graphically for the multiplicity distribution, the angular distribution of the shower particles in the center-of-mass system of colliding nucleons for events of varying multiplicity, the distribution of $\lg(\gamma_s/\gamma_c)$ for three multiplicity ranges, and the dependence of γ_s/γ_c on the multiplicity for three energy values E_0 . The multiplicity distribution was found to be extremely broad. With an increase in n (relativistic tracks) the angular distribution becomes more isotropic. The distribution of $\lg(\gamma_s/\gamma_c)$ becomes less broad with an increase in n_s ; however, the systematic shift toward high values of γ_s remains. Reasons are given for this phenomenon. The value of γ_s increases more rapidly than $\sqrt{E_0}$.

USSR

UDC: 620.193.01:669.295

TOMASHOV, N. D., RUSKOL, Yu. S., VLASOV, V. I., Institute of Physical Chemistry, Academy of Sciences of the USSR

"Oscillographic Study of the Self-Passivation of Titanium After Surface Dressing in NaCl Solutions"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 250-255

Abstract: The authors studied oscillographic curves for the potential drop of a titanium electrode after its surface had been cleaned under a sodium chloride solution. The experiments were done on specimens of iodide titanium (TsMTU 05-18-67, HB 66.5) which was remelted in an arc furnace with consumable electrode in a helium atmosphere, forged and annealed in a vacuum (10^{-4} mm Hg) at 650°C for 40 minutes. Specimens 6 mm in diameter were pressed into Teflon holders so that only one end surface was exposed. Before the experiments, the specimens were cleaned with M-28 abrasive paper, degreased with acetone and rinsed with distilled water. The installation used for cleaning the surface under sodium chloride was described in a previous paper (N. D. Tomashov, R. M. Al'tovskiy, G. P. Chernova, "A Device for Electrochemical Study of Metals During Surface Cleaning Under a Solu-

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TOMASHOV, N. D. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 250-253

tion", Moscow, VINITI, theme No 13, No M-58-94/7, 1958). The rate of rotation of the Corundum disc was 1320 rpm (linear velocity of grinding with respect to the center of the specimen 3.11 m/s), and the speed of reciprocating motion of the disc was 2.15 mm/hr (600 nm/s), corundum grain size was 57-76 μ m. After 15 minutes of surface dressing, the wheel was removed from the specimen and the change in potential of the specimen with time was measured. For the first five seconds the measurements were made on the S1-19A CRT oscilloscope, after which an N-39 chart-recording millivoltmeter was used in some cases. The LPU-01 pH meter was used as a high-impedance amplifier. Cathode polarization curves were plotted at a rate of 1.2 V/hr using the P-5827 potentiostat in a three-electrode cell. A saturated calomel comparison electrode was used. It was found that the self-passivation of titanium is slowed down considerably in neutral solutions by increasing the concentration of chlorine anions and reducing the concentration of dissolved oxygen. In dilute aerated sodium chloride solutions, titanium is covered to a considerable extent by a chemisorption layer of oxygen even with continuous mechanical surface cleaning under solution.

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UDC 620.193.01.669.295

TOMASHOV, N. D., RUSKOL, YU. S., AYUYAN, G. A., IVANOV, YU. M., FLAVNEK, G. M., and NAZAROVA, R. I., Academy of Sciences USSR, Institute of Physical Chemistry

"The Effect of Alloying Elements on the Corrosion Behavior of Titanium"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 10-15

Abstract: The method of potentiostatic polarization curves, corrosion tests, and electron diffraction investigations were applied to investigate the corrosion and electrochemical properties of alloys based on titanium iodide with small additions of chromium, molybdenum, niobium, aluminum, manganese, and tin in a 40% H_2SO_4 solution at 80° under natural aeration, conditions.

The structure of the anodic oxide films developing on these alloys was analyzed. The passivation and full passivation potentials were found to be practically independent of the nature and concentration of the alloying addition, whereas the critical passivation currents and the currents in the passive zone varied significantly. Aluminum impairs the corrosion properties of titanium both in the active and passive states. Manganese and chromium increase the rate of corrosion in the active state and decrease it in the passive state. Niobium, on the other hand, reduces titanium corrosion rate in the active state and increases it in the passive state. One figure, three tables, thirteen bibliographic references.

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USSR

UDC 669.018.8

TOMASHOV, N. D., ~~RUSKOL, YU. S.~~, IVANOV, YU. M., and PLAVNIK, G. M.,
Institute of Physical Chemistry, Academy of Sciences USSR

"The Effect of Phase Composition of Ti-15% Mo alloys on Its Corrosion Behavior
in the Active State"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 507-513

Abstract: The corrosion behavior of Ti alloys with 15.1% Mo with a β structure was studied. The alloy was prepared from titanium iodide with the addition of molybdenum, first subjecting it to crucibleless electron-radiation zone smelting. The smelting was carried out in an arc furnace with non-consumed tungsten electrodes in the holes of a water cooled copper tray in an atmosphere of spectrally pure helium. At the same time a control with titanium iodide was run in one of the holes. If the hardness of the titanium as a result of smelting was increased due to gas adsorption much more than 10 units on the Vickers scale, the melt was discarded. The 50 g ingots obtained were forged at 900° into rods and sheets. Finally, after removing the scale and surfaces defects, it was rolled into strips.

Thermal processing of the samples was carried out by heating evacuated and sealed ampules in a muffle furnace for 30 min. at 950°. They were then

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transferred to a water bath and fast mixing the ampule was broken. The samples prepared in this fashion had a Vickers hardness H_v of 10/30 - 190.

Before the electrochemical studies, the samples were cleaned with sandpaper, degreased with acetone, washed with distilled water, and dried in a dessicator for not more than 1 day over $CaCl_2$. The tests were carried out with natural aeration in 40% sulfuric acid solutions at different temperatures.

Since samples with a β and $\beta + \omega$ structure with a spontaneous natural air oxide film are not activated at temperatures below 85° , and with a $\beta + \alpha$ structure below 70° , a preliminary activation (1 min. in the same acid) of the alloys with a β and $\beta + \omega$ structure at 90° and with a $\beta + \alpha$ structure at 75° was carried out. Without activation the melt remained in the passive state, having a positive stationary potential (e.g., 0.1 v at 80° for alloys β and $\beta + \omega$) and a lower velocity of corrosion ($10.09 \text{ g/m}^2 \cdot \text{hr}$). After activation the alloy was steadily dissolved in an active state with significant velocity.

A significant effect is shown by the phase composition of Ti - 15% Mo alloy on its corrosion in the activated condition. A much higher corrosion resistance is observed with the single phase β alloy, the least with the two phase $\beta + \alpha$ alloy. This was determined by the much higher resistance

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of the β -phase containing, in comparison to the α and ω phases, a higher Mo content. Thus, for maximum increase in the resistance of titanium alloys, alloys with a β -stabilizer (e.g., Mo, Nb, V) it follows that it is possible to apply a thermal processing which will promote the conservation of a single phase β state.

It was also shown that a significant deterioration in the corrosion properties of Ti-Mo alloy occurred in the presence of the metastable ω -phase. In the diffusion of two phase $\beta + \alpha$ and $\beta + \omega$ alloys in the activated state in the region of a potential of 0.260-0.140 v, a concentrated Mo phase accumulates on the surface.

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USSR

UDC 620.193.1:669.295

TOMASHOV, N. D., ANOSHKIN, N. F., MOROZNIKOVA, S. V., OGINSKAYA, YE. I.,
RUSKOL, YU. S., and CHERNOVA, G. P., Institute of Physical Chemistry, Academy
of Sciences USSR

"Investigation of the Effect of Palladium on the Engineering, Mechanical and
Corrosion Properties of Titanium Alloys OT4 and VT14"

Moscow, Zashchita Metallov, Vol 9, No 6, 1973, pp 672-675

Abstract: The possibility of increasing the corrosion resistance of titanium
alloys OT4 and VT14 by means of alloying with 0.2% Pd was studied. The alloys
were produced in a vacuum-arc furnace with the palladium added in the form of
powder. Structure of OT4 and OT4+0.2% Pd was the alpha-solid solution, and
VT14 and VT14+0.2% Pd--fine grains of the alpha- and alpha"-phases inside a
beta-matrix. Strength properties of the titanium alloys were improved somewhat
with the addition of palladium while ductility was lowered. The addition of
2.0% Pd significantly lowered the oxidation tendency of the alloys at 600 and
800°C, and especially at 1000°C. 3 figures, 4 tables, 6 bibliographic refer-
ences.

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